Electrification Sustainability Program In South Sudan (ESP)

Cooperative Agreement No. AID-668-A-12-00002

Quarterly Report

August 8 – September 30, 2012

NRECA International Ltd.
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Contents

List of Terms and Acronyms

CIS	Customer Information System
COP	Chief of Party
DCOP	Deputy Chief of Party
ESP	Electrification Sustainability Program
RSS	Republic of Southern Sudan
KAPECO	Kapoeta Electric Company
MECO	Maridi Electric Company
NGOs	Non-Government Organizations
NRECA	National Rural Electric Cooperative Association
USAID	United States Agency for International Development
WES	Western Equatorial State
YECO	Yei Electric Cooperative

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Introduction

Background

Since 2005, the U.S. Government has provided ongoing infrastructure and institutional support to strengthen power sector planning throughout South Sudan, and to initiate or improve service delivery in Kapoeta, Maridi, Yei and Juba. Under the South Sudan Rural Electrification Project, USAID financed design and construction of a small generation-distribution utility in Yei that has evolved into a self-sustaining municipal electric cooperative serving approximately 1,200 consumers. Thereafter, USAID financed construction of two additional market town electrification projects in Kapoeta and Maridi; these two systems began commercial operations in April, 2011 and serve approximately 300 customers – households, commercial enterprises, public institutions and NGOs – in each community.

The challenges these small utilities face are similar but not identical. In the case of Yei, the utility commercializes enough electrical energy to cover all operating expenses and has managed to finance corrective and preventative maintenance costs for the past four years. However, the staff turnover has been high, and management still requires support to achieve long-term institutional and financial sustainability.

The two nascent utilities in Kapoeta and Maridi have not yet connected enough consumers nor do they sell enough electricity to achieve financial sustainability. The cost of generated energy is quite high, house wiring costs are still high, and there simply has not been enough time to connect enough consumers to reach a break-even point between operating costs and revenues. In both cases, there is also a need for ongoing training and mentoring for the boards of directors, the management, and the administrators and line workers who work in both utilities.

The Electrification Sustainability Program (ESP) has been designed to address the needs of all three utilities, as well as to undertake hydroelectric studies in Yei and Maridi (should additional funding become available), and to support Western Equatoria State (WES) and the Republic of South Sudan (RSS) to initiate planning for utility formation in Yambio.

ESP Objectives

The ESP is designed to support the process of achieving long-term sustainability for the electric generation-distribution utilities in Kapoeta, Maridi and Yei and to initiate utility formation in Yambio.

As per the Cooperative Agreement, the program assistance will result in "generation-distribution utilities that have well-established business systems and staff that are trained to manage the business systems without external oversight; to have a technical team with the capacity to manage the day-to-day operating challenges of small, islanded, vertically integrated electric utilities, including power plant management and the operation and maintenance of the distribution system."

A second project objective is to explore the potential for development of micro- and small-hydro generation near Maridi and Yei through the pre-feasibility studies in order to reduce the cost of power supply to MECO and YECO. In the event that USAID decides to pursue those

investments, the ESP program includes an option to review the feasibility of these investments and oversee the completion of final design of micro/small hydroelectric projects as proposed.

The third project objective will focus on completion of an institutional and technical evaluation of the incomplete Yambio electric generation-distribution system. The ESP team will engage in a comprehensive evaluation of the engineering and construction requirements to energize the generation-distribution system, and will evaluate management options to achieve sustainable operation of the utility in collaboration with WES leadership and technical-administrative staff .

Project Team

The NRECA project team assigned to support ESP includes the following team members, by position:

Person	ESP Duties	Tenure
Robert O. Ellinger	Chief of Party	Full Time
Janet Kauffman	Deputy Chief of Party	Full Time
Swalleh Rajab	Senior Commercial Utility Advisor	Full Time
James VanCoevering	Electrical Engineer	Part Time
Md. Tajul Islam	Customer Information System (CIS) Specialist	Contracted-Part Time
Jerry Rodgers	Lineman Training Specialist	Contracted-Part Time
Eldon Stanley	Power Generation Specialist	Contracted-Part Time
Gregory Boudreaux	Board Development Specialist	Contracted Part Time
Kent Wick	Utility Finance Specialist	Contracted Part Time
Laban Kariuki	Utility Planning Specialist	Contracted Part Time

Additional support will be provided by the NRECA International Foundation that will take responsibility for organizing volunteer services of U.S. line workers from NRECA member cooperatives in the United States. NRECA International Foundation contributions will be managed by the Foundation Program Manager and Foundation Program Assistant.

Key Issues - Challenges

Logistics

Kapoeta, Maridi and Yei are located significant distances from one another resulting in challenges providing services to all three electric utilities. To address this challenge the NRECA team has established a base of operations in Maridi at the MECO compound where both the Chief of Party (COP) and Deputy Chief of Party (DCOP) reside. In addition, a senior commercial specialist continues to reside and work in Kapoeta where he provides management oversight to KAPECO. The COP and DCOP will travel to Kapoeta periodically to provide management, accounting and CIS specific training. The COP, DCOP and senior management specialist have also begun to provide support to YECO; the COP and DCOP recently completed an in-depth evaluation of YECO operations that will be used to define specific training and technical assistance needs.

While the ESP design stated that ESP would board training sessions and peer-to-peer workshops in a central location , discussion with the utility directors has led the ESP team to conclude that this may not be possible for several board members. The time required for travel and the training itself may require travel for more than one week at a time, which will not be possible for board directors who are small businessmen. Plans to offer employee training on a central basis will continue, but alternatives will be considered; board training will be dependent upon available training facility, as well as cost and convenience to the trainees. Linemen and power generation training will be provided by short-term specialists and volunteers on site, traveling to each utility. To the extent centralized training activities can be used to allow training of employees at all three utilities, the ESP training team will do so when possible.

Barriers to Increase Service Connections

The lifeblood of any business is a positive revenue stream that is dependent upon a growing customer base. Unfortunately, increasing service connections at all three utilities has been and continues to be limited by a variety of different factors. As part of the ESP project, the team will evaluate how to overcome some barriers to new connections, given that the financial health of each of the utilities is dependent upon growth of electricity sales. The teams will also review means of encouraging more sales per consumer given that more unit sales will concurrently contribute directly to financial viability. The team will also be options on how to reduce the cost of wiring homes and businesses in an attempt to reduce the initial installation costs and encouraging more customer connections.

Local Training Partners

ESP, while providing a full complement of training specialists and materials, recognizes that sustainability of the three utilities will depend in large part on engaging and preparation of local training partners. Given the short duration of ESP implementation to date, the team has not yet made significant progress towards this goal. As the team is more engaged in training activities, NRECA will evaluate the potential to work collaboratively with local training institutions to develop and deliver courses. The local training partners will be identified through a process that will begin with identifying qualified institutional training partners, followed by a formal

solicitation to request financial proposals from interested, qualified candidate institutions. Local institutions will be engaged to participate in skills building tasks, such as accounting and financial management; director orientation training (board certification), and basic computing skills training, among other training activities that will be identified during the program implementation period. The ESP management team will further confer with USAID and other South Sudanese donor agencies to identify programs and resources that may be tapped to further contribute to institutionalizing a long-term training program.

Utility Assets

The asset disposition for all three utilities was a topic of discussion during recent meetings with the board of directors and management staff at each utility. The asset list for both KAPECO and MECO has been provided to USAID along with a recommendation that the assets, while legally required to be turned over to the State government, be done so with the caveat that the assets must be used to electrify the towns of Kapoeta and Maridi. NRECA is in the process of finalizing the accounting for the YECO assets which will be turned over to the local cooperative once everything is finalized.

YECO has recorded assets by donor, but has not itemized the assets (except categorizing them as administration, generation or distribution—not land, buildings, poles, substations, etc.) MECO and KAPECO do not have fixed assets recorded. Once the ownership of the assets is transferred guidance will be needed to break the assets down into depreciable units to establish fixed asset accounting records for the utilities.

The lack of official ownership is causing some problems in regards to true ownership, legal responsibilities (e.g. insurance coverage, replacement) and the question of using assets to secure funding through commercial sources.

Activity Summary

Project Mobilization

The ESP management team mobilized to South Sudan in September, 2012. The COP contacted all team members to confirm participation and availability for project implementation activities.

The team established the principal program office in Maridi, South Sudan and also assigned personnel at each of the other two project sites in Kapoeta and Yei. Initial administrative tasks to get project started have been completed. Bank accounts opened; business cards and stationary have been designed and purchased. Project Signage has been developed, approved by USAID and ordered from a supplier in Juba.

The project Work Plan, Monitoring and Evaluation Plan, and Branding and Marketing Plan were developed and submitted to USAID for initial review and comment. A project kick-off meeting was held at USAID headquarters on September 13. An introduction of key staff was followed by a detailed review of the project plans. NRECA revised the project Work Plan, Monitoring and

Evaluation Plan, and Branding and Marketing Plan following the receipt of USAID comments and edits. The final submissions received USAID approval on October 17.

As part of the project plan approval it was agred that the Monitoring and Evaluation Plan would be revised with the inclusion of the baseline numbers and goals currently being developed following the initial utility diagnostics

Task I – Technical and Financial Sustainability Support for Kapoeta, Maridi and Yei Electric Utilities

CIS and Accounting Workshops and Mentoring Activity

An outline for the initial workshop covering CIS and accounting issues has been completed. The CIS employed for the three utilities was adapted to meet the specific accounting, billing, and reporting needs of these three remote generation-distribution utilities that have relatively modest business needs. It has been noted that the administrative, accounting and commercial staff require additional training and orientation in the software system, however. For this reason, a training workshop will be offered in November, 2012 that will cover the following training topics:

- Introduction to accounting principles and practices
- Preparation of reports and financial statements
- Correctly setting the parameters for CIS processing
- Data entry and processing

The material covered in this training session will be presented at each utility over a two week period with formal training covering one week followed by a week of observation, monitoring and mentoring of staff to ensure a basic knowledge of the system and concepts. It is anticipated that two additional workshops will be offered at each location later in FY 2013.

Benchmark Diagnostics

NRECA completed a benchmark diagnostic of enterprise functionality at each utility in September, 2012. The assessment included an evaluation of general management proficiency, administrative functions including accounting, financial management and human resource systems, commercial management, operations and maintenance functions of the generation and distribution plant, and other ancillary activities. The evaluation focused on identification of gaps in performance to allow a training and technical assistance plan to be developed.

The evaluation produced a diagnostic score card that is being compiled. Results will be presented to each utility and to USAID in November. This assessment will be used to define the baseline performance of KAPECO, MECO and YECO, and to determine specific capacity building needs of each program partner. The diagnostic will be updated annually to present objective information to the board and management of KAPECO, MECO and YECO as well as to USAID.

Technical Assistance and Mentoring

While much of the emphasis of the initial weeks of the program has been placed on project mobilization and the diagnostic process, ESP team members have also invested significant effort to begin the mentoring process on simple organizational and utility management functions. The management team has observed various activities, process and procedures providing guidance and help with corrective action. The mentoring process will build practical, day to day business skills based upon the sound foundation developed through the formal training program to be introduced.

Revised Utility Weekly Operations Report

The utility weekly operating report has been revised and will be distributed to the utilities this week for use from November 1st forward. Key monitoring and measuring indicators from this report will be included in future quarterly reports

Task II – Yei, Maridi Hybrid Micro-Hydro Capacity

No activity has yet been undertaken with regard to Task II. This task will be undertaken after further discussion with USAID and when funding is available to conduct the feasibility studies.

Task III - Utility Evaluation and Development Support for Yambio

Two visits have been made to Yambio to review the generation-distribution system and begin the dialogue regarding management options for the Yambio generation-distribution system. Significant progress had been made to design, procure and install power generation and distribution infrastructure in Yambio, but the system is not yet ready to be placed in service, and the government of Western Equatoria will need to finalize its plans regarding how the system will be administered.

An introductory visit for the COP and DCOP was held the third week in September. During the visit we met David Nimery, State Director of Electricity who also serves on the MECO Board of Directors. This meeting preceded a meeting with Dimitri Manae Lokaco, Director General, Ministry of Physical Infrastructure, WES where the ESP project was discussed including the possible benefits to Yambio and WES. Together with the DG, the ESP management team later met Hon. Clement Juma Mbugoniwia, Minister of Physical Infrastructure and Public Utilities, WES.

In the second week of October, the COP accompanied representatives of USAID and UNOPS to explore the opportunity for USAID to continue support to the region in the area of food security, road and infrastructure development. This meeting also included a session with the Honorable Minister Mbugoniwia focused on road and electric infrastructure improvements.

A tour of the distribution plant and generation facilities followed the meetings held with the WES representatives.

Major Events – Upcoming Activity

- Customer Information System and Accounting Training program will begin 12-Nov. and run through 20-Dec. As part of this training Md. Tajul Islam, CIS Training Specialist will arrive in South Sudan on 11-Nov. (Training program described earlier in the report.)
- Lineman Training classes and workshops will begin 19-Nov. and run through 20-Dec. As part of this training Mr. Jerry Rodgers, Lineman Training Specialist will arrive 17-Nov.

  The linemen training will focus on a combination of safety training and skills development to ensure that linemen and groundmen learn how to work with minimal risk of injury on line construction and maintenance procedures, as well as to successively build skills in all phases of line construction and maintenance procedures.

  The Lineman Training Specialist will design and offer a training program at each utility on new service installations consisting of inspection of the consumer premises, including extension of the service drop from the distribution transformer to the meter; meter mounting and interconnection with the house wiring circuit; inspection of internal house wiring; and instructions to provide to the home or shop owner. A second training module on construction of short primary line extensions covering pole excavation, pole top structure assembly, pole setting, guying, conductor pulling, and transformer mounting procedures is also planned for this visit.

  The material covered in this module will be presented at each utility over a two week period with formal training covering one week followed by a week of observation, monitoring and mentoring of staff to ensure a basic knowledge and understanding of the requirements and concepts. It is anticipated that two additional workshops will be offered at each utility throughout the remainder of FY 2013.

- Power Generation Training program will begin 28-Nov. and run through 20-Dec. As part of this training program Mr. Bud Stanley, Power Generation Training Specialist will arrive in South Sudan on 27-Nov.

  This power generation training for management and operations staff will focus on a combination of generator operation training and skills development to ensure that all parties involved with the operation of the electric generation system are knowledgeable of correct operation and maintenance procedures. This training will include sessions on proper operations and maintenance of the generator equipment including operation and monitoring procedures, fuel monitoring and procurement, proper scheduling of equipment maintenance and what organizations are available to offer assistance with operation and maintenance issues.

  The material covered in this module will be presented at each utility over a 5-7 day period which will include formal training sessions followed by observation, monitoring and mentoring of staff to ensure a basic knowledge of the power system and concepts.

- Senior Commercial Utility Advisor Swalleh Rajab will be on annual leave beginning 31-Oct. through 12-Nov.

Financial

Financial Status (as of end of reporting period - 9-30-2012)**:**	
a. Project Start Date:	8/08/2012
b. Project Completion Date:	8/07/2015
c. Estimated Life of Activity (months):	36
d. Expired Life of Activity (months):	2
e. Total Estimated Cost:	3,870,000
f. Unilateral Obligation	2,194,000
g. Bilateral Sub-obligation	0
h. Total Obligation:	2,194,000
i. Mortgage (e-h):	1,676,000
j. Expenditures:	150,216
k. Pipeline as of end of reporting period (h-j):	2,043,784
l. Historical Monthly Burn Rate (j/d):	75,108
m. Average Monthly Burn Rate (Last Quarter):	n/a – First quarter of implementation
n. Length of Pipeline in Months (k/m):	27.21
o. Cumulative Expenditures as % of Obligations:	6.85%

No.	Activities and Tasks	Duration	Task Descriptions	Milestones	Planned Completion Date	Completion Date
1.0	Project Team Mobilization	Month 1 to Month 3				
1.1	Program Workplan, M&E Plan and B&M Plans established		2013 Workplan, Monitoring and Evaluation Plan and Branding and Marketing Plan developed and submitted to USAID/South Sudan for comment	Project plans completed	5-Sept-2012	5-Sept-2012
1.2	Kick-off meeting with USAID/South Sudan		Program review with USAID/SS AO & AOR.	Meeting conducted.	13-Sept-2012	13-Sept-2012
1.3	Program Workplan, M&E Plan and B&M Plans reviewed		USAID Provide comments on various project plans for revision	Comments received from USAID	28-Sept-2012	8-Oct-2012 13-Oct-2012
1.4	Workplan, M&E & B&M Plans revised and approved		Final Submittal to USAID and Approval	Plan Approved by USAID	19-Oct-2012	17-Oct-2012
3.0	Maridi, Yei Hybrid Micro-Hydro Capacity		This option, should additional funding come available, is for final design of one or more viable micro/small hydro generation projects in Yei and Maridi, depending upon the results of EGAT-financed prefeasibility studies for two sites in Yei and a third site in Maridi.	Funding source not yet identified	N/A	
4.0	WES and Yambio Electric Utility Assistance	Month 3 to Month 13	Introductory meetings help with government officials and generation – distribution system reviewed	Introductions and system review		19-Sept-2012 10-Oct-2012

ESP Project Gantt Chart